

AMENDMENTS TO THE CLAIMS

I. Listing of Claims

1. (Currently Amended) A four-wheel drive work vehicle comprising:

an engine;

a pair of right and left steerable wheels rotatably driven by receiving power from the engine via a differential mechanism;

a pair of right and left non-steerable wheels rotatably driven by receiving power from the engine via right and left side clutches;

a displacement converter mechanism for converting a steered displacement of the steerable wheels into a different mode of displacement; and

a clutch operating member for operating one of the side clutches based on said different mode displacement converted by the displacement converter mechanism;

wherein said displacement converter mechanism comprises a pivotal cam mechanism including a cam member which is displaced based on said steered displacement and a cam follower member operably associated with said cam member; and

for a vehicle turn, said clutch operating member is displaced via said pivotal cam mechanism by a predetermined amount in response to a steering operation of the steerable wheels by an angle exceeding a predetermined angle from a straight traveling condition and wherein, in association with said displacement of the clutch operating member by said predetermined amount, said one side clutch for one of the non-steerable wheels located on the inner side of said vehicle turn is automatically disengaged against an engaging urging force, wherein the cam follower has an operative cam face portion for contacting the cam member to move the cam follower in order to disengage said one side clutch and a stable cam face portion for maintaining the side clutch at a predetermined clutch disengaging condition during a further steering operation of the steerable wheels after the clutch disengagement.

2. (Withdrawn) The four-wheel drive work vehicle according to claim 1, wherein said cam member of the pivotal cam mechanism comprises a sector gear pivotable back and forth in response to a steering operation of a steering wheel, said cam follower member of the pivotal cam mechanism comprises a pivot arm which comes into contact with a contact member provided to said sector gear, and said pivot arm includes a first arm portion operable by said contact member in response to a steering operation to the left and a second arm portion operable by said contact member in response to a steering operation to the right.

3. (Withdrawn) The four-wheel drive work vehicle according to claim 2, wherein the first arm portion and the second arm portion are formed integral.

4. (Withdrawn) The four-wheel drive work vehicle according to claim 2, wherein the first arm portion and the second arm portion are configured to be displaced independently of each other.

5. (Currently Amended) The four-wheel drive work vehicle according to claim 1, wherein said cam follower member of the pivotal cam mechanism comprises a pivotal cam plate having a cam face including said operative cam face portion and said stable cam face in its outer periphery,

said cam member of the pivotal cam mechanism comprises a pivot member which comes into contact with said cam face, and

said pivotal cam mechanism is incorporated in a transmission case accommodating said side clutches.

6. (Previously Presented) The four-wheel drive work vehicle according to claim 5, wherein the pivotal cam plate of the pivotal cam mechanism is attached to a portion of an operational shaft attached to and extending through said transmission case,

said shaft portion projecting from the case and said clutch operating member is attached to a further portion of the shaft disposed inside the transmission case.

7. (Canceled)

8. (Previously Presented) The four-wheel drive work vehicle according to claim 6, wherein the operational shaft is attached to the transmission case such that the shaft extends through the case in the fore and aft direction.

9. (Previously Presented) The four-wheel drive work vehicle according to claim 1, wherein the steered displacement of the steerable wheels is transmitted via a wire to said pivotal cam mechanism.

10. (Previously Presented) The four-wheel drive work vehicle according to claim 1, wherein a mower implement is mounted between the steerable wheels and the non-steerable wheels to be lifted up and down.

11. (New) A four-wheel drive work vehicle comprising:

an engine;

a pair of right and left steerable wheels rotatably driven by receiving power from the engine via a differential mechanism;

a pair of right and left non-steerable wheels rotatably driven by receiving power from the engine via right and left side clutches;

a displacement converter mechanism for converting a steered displacement of the steerable wheels into a different mode of displacement; and

a clutch operating member for operating one of the side clutches based on said different mode displacement converted by the displacement converter mechanism;

wherein said displacement converter mechanism comprises a pivotal cam mechanism including a cam member which is displaced based on said steered displacement and a cam follower member operably associated with said cam member; and

for a vehicle turn, said clutch operating member is displaced via said pivotal cam mechanism by a predetermined amount in response to a steering operation of the steerable wheels by an angle exceeding a predetermined angle from a straight traveling condition and in association with said displacement of the clutch operating member by said predetermined amount, said one side clutch for one of the non-steerable wheels located on the inner side of said vehicle turn is automatically disengaged against an engaging urging force,

wherein said cam follower member of the pivotal cam mechanism comprises a pivotal cam plate having a cam face in its outer periphery, said cam member of the pivotal cam mechanism comprises a pivot member which comes into contact with said cam face, and

said pivotal cam mechanism is incorporated in a transmission case accommodating said side clutches.

12. (New) The four-wheel drive work vehicle according to claim 11, wherein the pivotal cam plate of the pivotal cam mechanism is attached to a portion of an operational shaft attached to and extending through said transmission case,

said shaft portion projecting from the case, and

said clutch operating member is attached to a further portion of the shaft disposed inside the transmission case.

13. (New) The four-wheel drive work vehicle according to claim 11, wherein said pivotal cam plate includes a stable cam face portion formed in the cam face for maintaining the side clutch at a predetermined clutch disengaging condition in response to a further steering operation of the steerable wheels after the clutch disengagement.

14. (New) The four-wheel drive work vehicle according to claim 12, wherein the operational shaft is attached to the transmission case such that the shaft extends through the case in the fore and aft direction.

15. (New) The four-wheel drive work vehicle according to claim 11,

Application No. 10/823,532
Paper Dated: April 17, 2006
In Reply to Office Action dated November 16, 2005
Attorney Docket No. 0388-043890

wherein the steered displacement of the steerable wheels is transmitted via a wire to said pivotal cam mechanism.

16. (New) The four-wheel drive work vehicle according to claim 11, wherein a mower implement is mounted between the steerable wheels and the non-steerable wheels to be lifted up and down.